

Claims

1. A pre-filled and disposable needleless injection device (1) comprising a body (2) supporting or  
5 delimiting a plurality of elements forming a circuit of elements, this circuit comprising an initiation device, a pyrotechnic gas-generating charge (62), a reservoir (5) containing an active principle which is to be injected and a system for injecting the active  
10 principle, the body (2) comprising a housing situated in the circuit of elements, said device being characterized in that the pyrotechnic charge (62) is contained in a pyrotechnic cartridge (6) and in that said housing is intended to accommodate the pyrotechnic  
15 cartridge (6) and is accessible from the outside so that the pyrotechnic cartridge (6) can be inserted directly in the circuit of elements, independently of the other elements.

20 2. The device (1) as claimed in claim 1, characterized in that the body (2) comprises an opening (20) communicating with the housing.

25 3. The device (1) as claimed in claim 2, characterized in that the cartridge (6), once in place in the housing, closes off the opening (20) in a manner that is sealed with respect to the outside.

30 4. The device (1) as claimed in one of claims 1 to 3, characterized in that the housing is placed between the initiation device and the reservoir (5) containing the liquid active principle.

35 5. The device (1) as claimed in one of claims 1 to 4, characterized in that the circuit of elements follows the shape of an inverted U comprising two parallel branches joined together via a perpendicular transverse branch.

6. The device (1) as claimed in claim 5, characterized in that the cartridge (6) is inserted into the circuit at right angles to the axis of symmetry of the U formed by the circuit.

7. The device (1) as claimed in claim 5 or 6, characterized in that the cartridge (6) is L-shaped and in that, once inserted, its shape follows a right angle present between one of the parallel branches of the inverted U formed by the circuit and its transverse branch.

8. The device (1) as claimed in claim 1, characterized in that the cartridge (6) has the shape of an L-shaped duct in which the pyrotechnic charge (62) is placed, this duct being plugged at one of its ends by a primer (60) and at its other end by a frangible diaphragm (61).

9. The device (1) as claimed in claim 1, characterized in that the device for initiating the pyrotechnic charge (62) comprises a percussion device (3) for striking the primer.

10. The device (1) as claimed in claim 9, characterized in that the housing in the body (2), able to accommodate the cartridge (6), is placed between the percussion device (3) and an expansion chamber (4) for the gases which is situated upstream of the reservoir (5).

11. The device (1) as claimed in claim 10, characterized in that the body (2) comprises a first hollow part and a second hollow part which are arranged along two parallel axes (A1, A2) and connected by a duct, this duct delimiting the housing for the cartridge (6) and the expansion chamber (4) for the

gases.

12. The device (1) as claimed in claim 11,  
characterized in that the cartridge (6) is placed in  
5 the housing in the body (2) in such a way that the  
primer (60) is situated along the axis of the  
percussion device (3) and that the diaphragm (61) is  
situated along the axis of the gas expansion chamber  
(4).